

Appl. No.10/708,424
Amdt. dated April 18, 2005
Reply to Office action of February 15, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

- 1 (currently amended): A voltage clamper for adjusting an input voltage to generate an
5 output voltage, the voltage clamper comprising:
a bias circuit for generating at least one bias voltage according to the input voltage;
a voltage drop circuit for controlling the input voltage to generate a
voltage drop, the voltage drop circuit comprising:
10 a predetermined voltage drop unit electrically connected to an
output terminal of the voltage clamper and the input voltage for
applying a predetermined voltage drop to the input voltage to adjust
the output voltage; and
a first voltage drop unit electrically connected to the output terminal of the
voltage clamper and the input voltage for applying a first voltage drop to the input
15 voltage to adjust the output voltage;
wherein the predetermined voltage drop unit is always activated, and the
activation of the first voltage drop unit is controlled by the voltage detection circuit;
and
a voltage detection circuit electrically connected to the voltage drop circuit and the
20 bias circuit for adjusting the voltage drop generated from the voltage drop circuit
according to the bias voltage to generate the output voltage.
- 2 (cancelled).
- 25 3 (currently amended): The voltage clamper of ~~claim 2~~ claim 3 wherein the
voltage detection circuit comprises:
a first voltage detection unit electrically connected to the first

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voltage drop unit for controlling the first voltage drop unit to adjust the output voltage.

4 (original): The voltage clamper of claim 3 wherein the bias circuit
5 comprises:

a first bias unit electrically connected to the first voltage detection unit for generating a first bias voltage according to the input voltage and for providing the first bias voltage to the first voltage detection unit;

10 wherein the first voltage detection unit controls the first voltage drop unit to adjust the output voltage according to the first bias voltage and a first predetermined voltage level.

5 (original): The voltage clamper of claim 4 wherein the first voltage
15 detection unit triggers the first voltage drop unit to adjust the output voltage when the first bias voltage is smaller than the first predetermined voltage level.

6 (original): The voltage clamper of claim 4 wherein the voltage drop
20 circuit further comprises:

a second voltage drop unit electrically connected to the output terminal of the voltage clamper and the input voltage for triggering the output voltage to be approximately equal to the input voltage;

25 wherein the activation of the second voltage drop unit is controlled by the voltage detection circuit.

7 (original): The voltage clamper of claim 6 wherein the voltage detection circuit further comprises:

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a second voltage detection unit electrically connected to the second voltage drop unit for controlling the second voltage drop unit to adjust the output voltage.

8 (original): The voltage clamper of claim 7 wherein the bias circuit further
5 comprises:

a second bias unit electrically connected to the second voltage detection unit for generating a second bias voltage according to the input voltage and for providing the second bias voltage to the second voltage detection unit;

10 wherein the second voltage detection unit controls the second voltage drop unit to adjust the output voltage according to the second bias voltage and a second predetermined voltage level.

9 (original): The voltage clamper of claim 8 wherein the second voltage
15 detection unit triggers the second voltage drop unit to adjust the output voltage when the second bias voltage is smaller than the second predetermined voltage level.

10 (original): The voltage clamper of claim 8 wherein the first voltage detection unit
20 comprises a first adjusting module for setting the first predetermined voltage level, and the second voltage detection unit comprises a second adjusting module for setting the second predetermined voltage level.

11 (original): The voltage clamper of claim 8 wherein the first bias voltage is equal to the
25 second bias voltage.

12 (original): The voltage clamper of claim 8 wherein the first predetermined voltage level is equal to the second predetermined voltage level.

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13 (currently amended): The voltage clamper of ~~claim 2~~ claim 3 wherein the first voltage drop is smaller than the predetermined voltage drop.

5 14 (currently amended): The voltage clamper of ~~claim 2~~ claim 3 further comprising a capacitor module electrically connected to the output terminal of the voltage clamp.

10 15 (original): The voltage clamper of claim 14 wherein the capacitor module comprises an N-type metal-oxide-semiconductor transistor, a gate and a drain of the N-type metal-oxide-semiconductor transistor are electrically connected to the output terminal of the voltage clamper, and a source of the N-type metal-oxide-semiconductor transistor is electrically connected to a ground voltage.

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16 (currently amended): A voltage adjusting method for generating an output voltage by adjusting an input voltage comprising:

20 (a) setting a plurality of voltage segments corresponding to a plurality of different voltage drop setting values and setting the voltage drop setting value of a first voltage segment to be greater than the voltage drop setting value of a second voltage segment, wherein a minimum voltage of the first voltage segment is greater than a maximum voltage of the second voltage segment; and

25 (b) utilizing one of the voltage drop setting values to trigger a voltage difference between the output voltage and the input voltage corresponding to the voltage drop setting value when the input voltage is within one of the voltage segments.

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17 (cancelled).

18 (new): A voltage clamper for adjusting an input voltage to generate an output voltage, the voltage clamper comprising:

- 5 a bias circuit for generating at least one bias voltage according to the input voltage;
 a voltage drop circuit for controlling the input voltage to generate a voltage drop, the voltage drop circuit comprising:
 a first voltage drop unit electrically connected to the output terminal of the voltage clamper and the input voltage for applying a
10 first voltage drop to the input voltage to adjust the output voltage;
 a second voltage drop unit electrically connected to the output terminal of the voltage clamper and the input voltage for applying a second voltage drop to the input voltage to adjust the output voltage;
 wherein the activation of the first and second voltage drop units is controlled by
15 the voltage detection circuit; and
 a voltage detection circuit electrically connected to the voltage drop circuit and the bias circuit for adjusting the voltage drop generated from the voltage drop circuit according to the bias voltage to generate the output voltage.

- 20 19 (new): The voltage clamper of claim 18 wherein the voltage drop circuit further comprises:

- a predetermined voltage drop unit electrically connected to an output terminal of the voltage clamper and the input voltage for applying a predetermined voltage drop to the input voltage to adjust
25 the output voltage;
 wherein the predetermined voltage drop unit is always activated, and the activation of the first and second voltage drop units is controlled by the voltage detection circuit.

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20 (new): The voltage clamper of claim 19 wherein the voltage detection circuit comprises:

5 a first voltage detection unit electrically connected to the first voltage drop unit for controlling the first voltage drop unit to adjust the output voltage.

21 (new): The voltage clamper of claim 20 wherein the bias circuit comprises:

10 a first bias unit electrically connected to the first voltage detection unit for generating a first bias voltage according to the input voltage and for providing the first bias voltage to the first voltage detection unit;

15 wherein the first voltage detection unit controls the first voltage drop unit to adjust the output voltage according to the first bias voltage and a first predetermined voltage level.

22 (new): The voltage clamper of claim 21 wherein the first voltage detection unit triggers the first voltage drop unit to adjust the output voltage when the first bias voltage is smaller than the first predetermined voltage level.

23 (new): The voltage clamper of claim 21 wherein the voltage detection circuit further comprises:

25 a second voltage detection unit electrically connected to the second voltage drop unit for controlling the second voltage drop unit to adjust the output voltage.

24 (new): The voltage clamper of claim 23 wherein the bias circuit further

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comprises:

5 a second bias unit electrically connected to the second voltage detection unit for generating a second bias voltage according to the input voltage and for providing the second bias voltage to the second voltage detection unit;

wherein the second voltage detection unit controls the second voltage drop unit to adjust the output voltage according to the second bias voltage and a second predetermined voltage level.

10 25 (new): The voltage clamper of claim 24 wherein the second voltage detection unit triggers the second voltage drop unit to adjust the output voltage when the second bias voltage is smaller than the second predetermined voltage level.

15 26 (new): The voltage clamper of claim 24 wherein the first voltage detection unit comprises a first adjusting module for setting the first predetermined voltage level, and the second voltage detection unit comprises a second adjusting module for setting the second predetermined voltage level.

20 27 (new): The voltage clamper of claim 24 wherein the first bias voltage is equal to the second bias voltage.

28 (new): The voltage clamper of claim 24 wherein the first predetermined voltage level is equal to the second predetermined voltage level.

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29 (new): The voltage clamper of claim 19 wherein the first voltage drop is smaller than the predetermined voltage drop.

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30 (new): The voltage clamper of claim 19 further comprising a capacitor module electrically connected to the output terminal of the voltage clamp.

5 31 (new): The voltage clamper of claim 30 wherein the capacitor module comprises an N-type metal-oxide-semiconductor transistor, a gate and a drain of the N-type metal-oxide-semiconductor transistor are electrically connected to the output terminal of the voltage clamper, and a source of the N-type metal-oxide-semiconductor transistor is electrically connected to a ground voltage.

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